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## STATEWIDE EDUCATION DATABASES:

## POLICY ISSUES

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**Discussion Draft**

**Prepared for the Chief State School Officers of the Northwest and Pacific**

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**May 1987**

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ABSTRACT

This essay reviews current policy issues regarding statewide educational databases. It begins by defining the major characteristics of a database and raising two questions: (1) Is it really necessary to have a statewide educational database? (2) What is the primary rationale for creating one? The limitations of databases in formulating educational policy are then assessed to consider how they may be linked to policy formation and decision-making processes. This linkage appears to operate on two levels: the rational/ideal level, in which management information in statewide databases is used to determine what is rationally true and ideally desired; and the pragmatic level, which takes into account social, political, economic, and emotional constraints. On account of the proliferation of special programs, the growing demand for research data, and the growth of electronic data processing capabilities, state education agencies should adopt the following policy criteria for including information in a database: (1) clearly established needs; (2) clearly established definitions; (3) clearly established limits; (4) coordination of multiple databases; (5) a means for incorporating outside data, (6) a balance between technological and educational interests; and (7) proper regard for confidentiality and ownership, coupled with availability. Carefully planned, appropriately used, and constantly revised and upgraded databases can become the foundation of sound educational policy. (TE)

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# STATEWIDE EDUCATION DATABASES: POLICY ISSUES

## I INTRODUCTION

Executive decision-making is always difficult, and when this activity must take place under complex conditions and in pressure-driven circumstances--as Chief School Officers well know--the difficulties are compounded. Chiefs today are buffeted by an array of powerful social, political, and economic forces--emerging national priorities and changing Federal programs, state legal and accountability requirements, increases in the number of at-risk students, and pressures from the business community to redesign educational programs so that they enhance "productivity" and "American competitiveness"--which enormously complicate the decision-making process.

Educational policy decisions are ultimately value judgements, but their quality can be greatly improved by the availability and use of sound education data. Thus, the importance of statewide databases is rapidly increasing.

Fortunately, so is the quantity and often the quality of the information and analysis contained in these databases--a volume increase, in fact, sometimes threatens to overwhelm the user. New possibilities and new problems emerge simultaneously.

One of these problems is the matter of defining the widely-used term itself; what is a "database?" A standard dictionary-type definition does not suffice, for "database" means many things to many different users. Perhaps a starting place at a definition would be to indicate what it is not.

A database, as the term is most generally used, is not just routine records or reports. It is not the product of a "study" or the findings of a "blue-ribbon commission." It is most definitely not--as someone has put it--a mass of papers piled in the office corner.

The major characteristics of a database (and this list of course does not constitute an air-tight definition) will usually include these:

-- planned

-- focused

-- systematic and orderly

-- statistically sound (though not necessarily statistically sophisticated)

-- in format that is understandable and easy to use

-- wherever appropriate and feasible, electronically based in terms of collection, analysis, storage and retrieval.

With this rather loose definition-by-characteristic, some common understanding of the meaning of "database" may be possible. But the definitional problem is not the only one facing the decision-maker. Several of the specific problems will be discussed below, but two overarching ones clearly must be addressed at the outset:

1. Is the establishment of the database really necessary, or is it just "nice to have" or "but gee, it's <u>available</u>" information. Even, perhaps, is it information that for some reason we would rather <u>not</u> have?

2. What is the primary rationale for creating the database? Because we need simply to know what <u>is</u>? Because we need to understand a relationship? Because we need to assess an impact? All of the above or none of the above?

In light of these two overarching questions, we can profitably move to examine more closely some of the detailed policy issues involved.

## II USING DATABASES IN FORMULATING EDUCATION POLICY

It would be comforting to believe--as some education decision makers appear to do--that if we just had enough of the right data, properly marshalled and displayed, those data would give us all we need to make appropriate ("right") policy decisions. When all of the factors are considered, however, it turns out that making policy on the basis of "known facts" is not really that simple. There are a number of limitations inherent in trying to transmute data into policy.

The limitations of databases. Even the best of databases have built-in limitations. For one thing, what is available as "education data" at any level in the education hierarchy is essentially what the respondents to the request for these data are willing and able to give. Essentially, then, many of the data to be aggregated into the state database are basically those which make their way through a chain of data-collectors and data-reporters--in the case of student achievement data, for example, from student to teacher to classroom to principal's office to central office and thence to the state. The possibilities for misunderstandings, honest mistakes, and biases which inevitably exist cannot be discounted in interpreting the data.

Moreover, even the most sophisticated--perhaps elegant--treatment of the data does not guarantee accuracy, saliency, or utility. As the data are "massaged" and the numbers "crunched," improvements may be wrought, but errors may also be compounded. Facts are not always truth.

Honest differences in interpretation of the meaning and significance of data further complicate the issue. Yet there are those who would maintain that if you have a technically defensible database, the facts will "speak for themselves," and the logical nature of the data, properly understood, will lead the observer to logical conclusions. That is just too simple to be convincing.

Recognizing these limitations of databases does not demean their value nor diminish their importance. Rather, it suggests the need to consider carefully how they may be linked to the policy-formulation and decision-making processes.

Linking databases to policy. As a first step in establishing this linkage, a commendable option might be to assert as a basic policy that all educational and management decisions would be based on the best and most applicable data available, meanwhile recognizing that these data must be considered to be potentially flawed, and therefore subject to rigorous scrutiny. With such a policy stance at the outset, the decisions will be based on the data, but not slavishly subject to them. The collective and collaborative intelligence of the decision-making body is thus kept preeminent.

Databases and decisions may be further profitably linked by appropriate application and sequencing of the use of the data. That is, the data can most effectively be used in certain areas and at certain times in the decision-making process. For example, a solid database might be extremely useful--really, absolutely essential--in defining the magnitude of a dropout problem, and (if the information is complete enough) in providing suggestions for specific programs which might be

used in attacking the problem. But with this preliminary information available, the decisions regarding which programs to try, what relationships will be established between the SEA and the LEA's, to which unit of the department the task will be assigned, and what fiscal and manpower priorities will be given--all of these decisions may well be based on, but certainly will transcend the original data.

Ultimately, the linkage between databases and policy decisions appears to operate on two levels: On the one, the rational/ideal level, the management information contained in the statewide education database is used to determine what is rationally true and ideally desired, and policy decisions are made wholly on this basis. But on another level--the typical operating one--the policy decisions seem constrained to be much more pragmatic: social, political, economic, and emotional factors, as examples, enter heavily into the decisions that are made.

Recogniting the two levels, denigrating neither one, and combining them as best we can--that may well be the ultimate "linkage" task of the education decision makers.

## III POLICY ISSUES IN DATABASE CONSTRUCTION AND USE

At the level of the state education agency, databases sometimes seem to evidence a couple of interesting biological phenomena: they generate spontaneously and reproduce with abandon. Actually, of course, these appearances are deceiving. The acquisition of data and the management of information are typically deliberate: education data are needed in order to plan and initiate instructional programs, to judge their success or

failure, to report the achievement of groups of students, to serve general accountability purposes (to the legislature, to the general public, to parents, and to the profession), and more commonly and often most important, simply to meet specific legal requirements.

Nevertheless, for many reasons--among them the proliferation of special programs and special-interest groups, the seemingly insatiable appetite for research data, and the phenomenal growth of electronic data processing capabilities--it seems prudent and useful to re-examine some of the fundamental issues that are involved in state education databases.

Clearly established needs. It should go without saying (but it doesn't!) that the only reasonable and responsible purpose for collecting and displaying data about education is to satisfy some need. The availability of the data, their intrinsically interesting nature, the precision with which they can be analyzed--these are not, for a state-supported agency, sufficient reasons for including the information in a database. Only to accomplish specific purposes, to meet specific needs, to answer specific questions can databases be built with the expectation that they can be fully justified. What specific data are required to meet these needs, satisfy these purposes, and answer the questions is, of course, a policy/management decision to be made by state education authorities.

Clearly established definitions. It has been a common experience to see databases designed to be used for informational or comparative purposes producing instead disillusionment and dissention because the definitions used were not rigorously crafted. Unless, for example, such rather general terms as "disadvantaged," "dropout," or "core learnings,"

(to say nothing of more straight-forward terms like "cost-per-pupil" and "teacher-pupil ratio") are quite precisely defined, neither the current status of the problem faced nor the road to its solution is likely to be clear. The argument is often advanced that the urgency of the issues to be resolved simply does not allow us the luxury of fine-tuning the definitions: we can't just suspend activities until everybody agrees. But clear definition does not require complete agreement; it merely requires that the words be used in a precise fashion, whether or not everybody agrees that the meaning is what it ought to be. The ideal to be achieved is a negotiated definition applicable to the specific state.

Clearly-established limits. It would seem a reasonable policy decision to determine at the outset how much of what data is going to be collected, and from whom. This need for announcing--and holding to--these limits is especially necessary for an SEA because of the seemingly unshakable suspicion held by many LEA's that the ultimate burden of any state-level collection of data is going to fall on the local districts. It is relatively easy to assert that the state is dedicated to reducing the "paperwork burden"; actually to bring this off is much more difficult.

Ideally, all of the kinds of data the state needs should also be useful to the local authorities, so SEA's would be serving their own interests in collecting and reporting this information. Actually, the state may have need for data to meet its own legal requirements, for its own planning processes, and for its own reporting purposes that may

appear to have little immediate usefulness for the LEA's. Resolving this conflict between state needs and local burdens is not simple, but to the extent that the fundamental approach is through cooperation, rather than coercion, the problem becomes at least more manageable.

Coordination of multiple databases. One specific approach to the cooperation suggested in the paragraph above is through better coordination of databases employed by the SEA to meet varied purposes. It has rather frequently been remarked that the school finance database, for example, is often an independent entity, lacking articulation with other collections of data made at the state level. Data about curriculum offerings and common learnings constitute another database, not connected with anything else. And test scores, often a rich source of policy information, are ensconced in still another database, not directly interrelated with other information available to the SEA.

But the problem is more complex yet because the various state agencies outside the SEA have their own independent, freestanding databases, not only unrelated to but often relatively unknown to those who work in public education. Economic projections, manpower forecasts, data regarding family and children issues, and other similar matters are often very completely assembled by a variety of state agencies, and expertly analyzed in terms of their problems and their needs, yet this rich source of data remains virtually unknown to the SEA. These data do not routinely need to be kept in the SEA database, but a planned linkage ensuring their availability would be most helpful.

The cooperation which might be desired among various state agencies in developing and utilizing databases is likely to be relatively difficult to obtain, given the historic independence of each of these agencies and the relative separation and autonomy of the SEA in relation to these other agencies, but a formal policy supportive of such cooperative efforts would have much to recommend it.

Nevertheless, the major problem with coordination of databases remains the internal one--that of bringing the diverse units of the SEA into both philosophical and working agreement on what data are needed to accomplish multiple purposes, and how they will be collected and utilized. One option for securing the desired cooperation would be to issue an administrative edict; another option much more likely to succeed would be the establishment of policy guidelines which put emphasis on building a common database which is capable of subsequent expansion and fine-tuning to serve multiple purposes.

"Outside" data. Beyond the resources of the SEA and of the state are other sources of useful data which are sometimes overlooked in educational planning, programming and decision making. An example is the vast wealth of federal census data, which can be mined for all sorts of useful material, as the NWREL has recently demonstrated in using this data source in developing significant information about the socioeconomic settings of types of schools that are variously described as small, isolated or rural. A policy of actively seeking out and using data from outside sources--federal agencies, business and industry groups, professional and trade organizations, or whatever--might do much to increase the richness and variety of data available to the SEA.

Balancing technological and educational concerns. A policy issue of rather intractable nature involves a determination of how to keep technological and educational interests in balance when setting up and maintaining state education databases. The tensions here are not those of a high-intensity pitched battle; rather, there continues to be a nagging, low-key feeling of exasperation on the part of both the technical specialists and the educators that the other group is lacking in proper understanding and empathy. Both groups are equally competent and well-intentioned but they reflect different viewpoints. The education-oriented users of the database are known to complain that it is the technology and the technologists (the machines and the people both) that determine the format and to some degree the content of the database--that the mechanics of the whole business dominates so that the data provided is not seen as relevant, timely, and understandable. On the other hand, the technologists sometimes believe that the educator-users really have insufficient technical knowledge and thus fail to understand and appreciate the technological problems and limitations which must be considered--and worse yet, often do not even use the data that technology and the technologists have made available.

This problem is, very likely, one that does not lend itself to final solution, but it does point up the great desirability of formulating policies which clearly set forth the primacy of the ultimate purpose of the database: that the ends desired--improvements in education--are fundamentally more important than the means--the technological processes.

Confidentiality, ownership, and sharing. A policy issue of increasing importance and complexity revolves around how to meet the multiple demands that are being placed upon the database system itself: to protect its confidentiality; to maintain legitimate rights of ownership of the data; and yet at the same time to share the data with those who have a demonstrable need and right to know. For example, there is really no argument about the obligation to protect confidential personal or individual information--a given student's scores, or the personnel records of a teacher--but is it right to keep confidential the scores of students in the room of an identifiable teacher in an identifiable classroom, or those of an identifiable ethnic group? Is it right to deny a request from a teachers' union for complete access to individual-district fiscal data which is in the SEA files (and collected and maintained at state expense), when the sole purpose of the request is to enable the group to use it in its own self-interest?

It is probably not possible to answer the rhetorical questions posed above in the language used--whether it is "right" to do this or that--but it is possible to consider what some of the policy issues may be. For example, it was generally maintained in education circles for many years that it would be bad policy to compare one classroom or school or local district or state with another because they could not be fairly compared without elaborate explanation of a host of variables which might explain the differences found. Without considering and explicating on these variables, releasing the information would just upset and mislead the public.

Yet in the last few years, in large part because comparative information of the "wall chart" variety is being released anyway, the consensus has gradually shifted to embrace the position that it is better policy to release information which is available, together with as much explanation as possible, than to withhold it for fear it will be inadvertently (or perversely) misinterpreted. The risks of such misinterpretation or misunderstanding are considered to be overbalanced by the gains to be achieved in assuring the various publics that we in education are reporting fairly and honestly on the conditions, the achievements and the problems of the public school system.

In much the same spirit of glasnost, sharing or making available all data that are not very specifically confidential has generally come to be the preferred policy stance. As long as the information has been collected and processed at public expense, and concerns an avowedly public enterprise, it becomes difficult to deny access to it on any rational grounds. Of course, there is every reason to insist that special costs be reimbursed by the user, that confidentiality be maintained, and that credit be given, acknowledging the source of the information. Such stipulations are clearly reasonable.

## In Conclusion

Although the approach in this paper has been somewhat critical of the way statewide education databases may sometimes be formulated and used, the intent of this analysis is wholly supportive. Carefully planned, appropriately used, and constantly revised and upgraded, these databases are not only linked to policy formulation, but become the bedrock foundation of sound education policy.

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- Developing and disseminating effective educational products and procedures
- Conducting research on educational needs and problems
- Providing technical assistance in educational problem solving
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- Providing training in educational planning, management, evaluation and instruction
- Serving as an information resource on effective educational programs and processes including networking among educational agencies, institutions and individuals in the region

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